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NOTES ON GEOGRAPHIC DISTRIBUTION

Pisces, Siluriformes, Auchenipteridae, *Trachelyopterus lucenai* Bertoletti, Pezzi da Silva & Pereira, 1995: historical occurrence and distribution extension

Luiz Guilherme Schultz Artioli * and Renata Maia

Universidade Federal do Rio Grande do Sul, Campus do Vale, Instituto de Biociências, Departamento de Zoologia, Laboratório de Ictiologia, Av. Bento Gonçalves 9500, Setor 4, Prédio 43435, Sala 119. CEP 91501-970. Porto Alegre, RS, Brazil.
* Corresponding author. E-mail: *luizartioli@hotmail.com*

ABSTRACT: The present note describes a historical occurrence and distribution extension of the species *Trachelyopterus lucenai* in coastal basins, state of Rio Grande do Sul, Brazil.

Trachelyopterus lucenai was described in 1995 (Bertoletti, Pezzi da Silva and Pereira 1995) for the Uruguai river and Patos lagoon system (type locality Jacuí river at Saco do Quilombo, Ilha das Flores, Porto Alegre, Rio Grande do Sul, Brazil, approximately 29°57'60.00" S, 51°15'0.00" W; Holotype: MCP 17174). However, its occurrence in such basins was first reported in 1989 (Bertoletti *et al.* 1992). Since 1998, this species have been collected at distinct sites of Patos lagoon system, such as Casamento and Gateados lakes in its northwestern portion (Milani and Fontoura 2007), Taim Ecological Reserve and Mangueira lake in its southwestern portion (Garcia *et al.* 2006; Artioli *et al*. 2009).

The first record of the species in the Tramandaí river basin was in 2004 based on samples obtained in the Fortaleza lake (Schifino *et al.* 2004). Recently, 69 specimens of *T. lucenai* were captured in the lakes of Itapeva, Quadros and Malvas (29°36'03.1" S - 49°58'48.1" W; 29°45'42.20" S - 50°5'18.60" W and, 29°47'30.20" S - 50°6'51.40" W, respectively) in field trips of a research project conducted by the CECLIMAR-UFRGS and Secretaria Especial de Aquicultura e Pesca (SEAP) known as Water quality and sediment monitoring program and fish behaviour (traíra *Hoplias malabaricus* and tainha *Mugil* spp.) in the north coast of Rio Grande do Sul aiming environmental conservation and artisanal professional fisheries development ('Monitoramento da qualidade da água e do sedimento e comportamento do pescado (traíra *Hoplias malabaricus* e tainha *Mugil* spp.) no litoral norte do Rio Grande do Sul, com vistas à preservação ambiental e desenvolvimento da pesca profissional artesanal'). Specimens were collected with SISBIO license #18439-1.

The specimens collected present all diagnostic characters of *T. lucenai*, a) a light-colored strip along the lateral line, from the humeral region to approximately the level of the anal-fin origin; b) the dorsal-fin spine, especially on matures males, with well developed bony hooks on anterior face; c) the supraoccipital bone with a pale outline, forming a polygon in dorsal view (Bertoletti *et al*. 1995).

Our current report extends the species distribution to about 70 km north of coastal lakes system in Tramandaí river basin. The connection between these coastal lakes seems to suggest that the species can be found in other coastal lakes from Tramandaí river basin (Figure 1). Representative specimens were catalogued at fish collection of Zoology Department, Universidade Federal

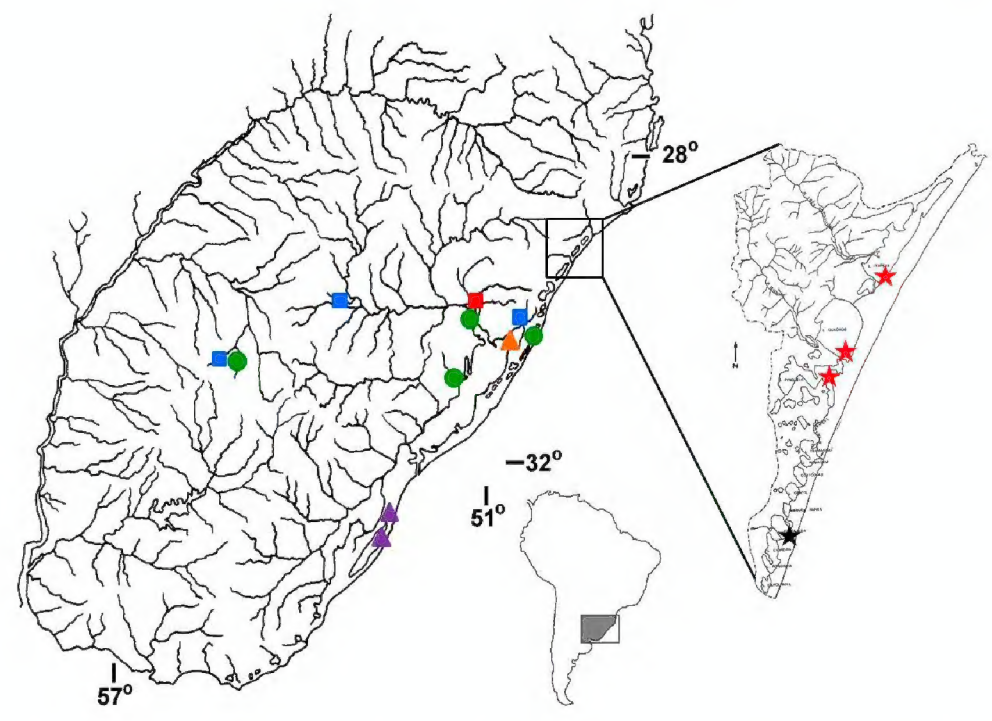

FIGURE 1. Historical occurrence of *Trachelyopterus lucenai* in the state of Rio Grande do Sul, Brazil, basead on literature review: ■ type locality (Bertoletti *et al.* 1992, 1995); ■ Palmares river, Vacacaí Mirim river and Ibicuí da Faxina river (Bertoletti *et al.* 1992); ● Quintão lake, Guaíba lake, Patos laggon and Ibicuí da Armada river (Bertoletti et al. 1995); ▲ Casamento and Gateados lakes (Milani and Fontoura 2007); ▲ lakes of the Taim Ecological Station and Mangueira lake (Garcia et al. 2006; Artioli et al. 2009); ★ Fortaleza lake (Schifino et al. 2004); ★ new ocorrence: Malvas lake, Quadros lake and Itapeva lake.

do Rio Grande do Sul (UFRGS 11900, 11901, 11902) (Figure 2).

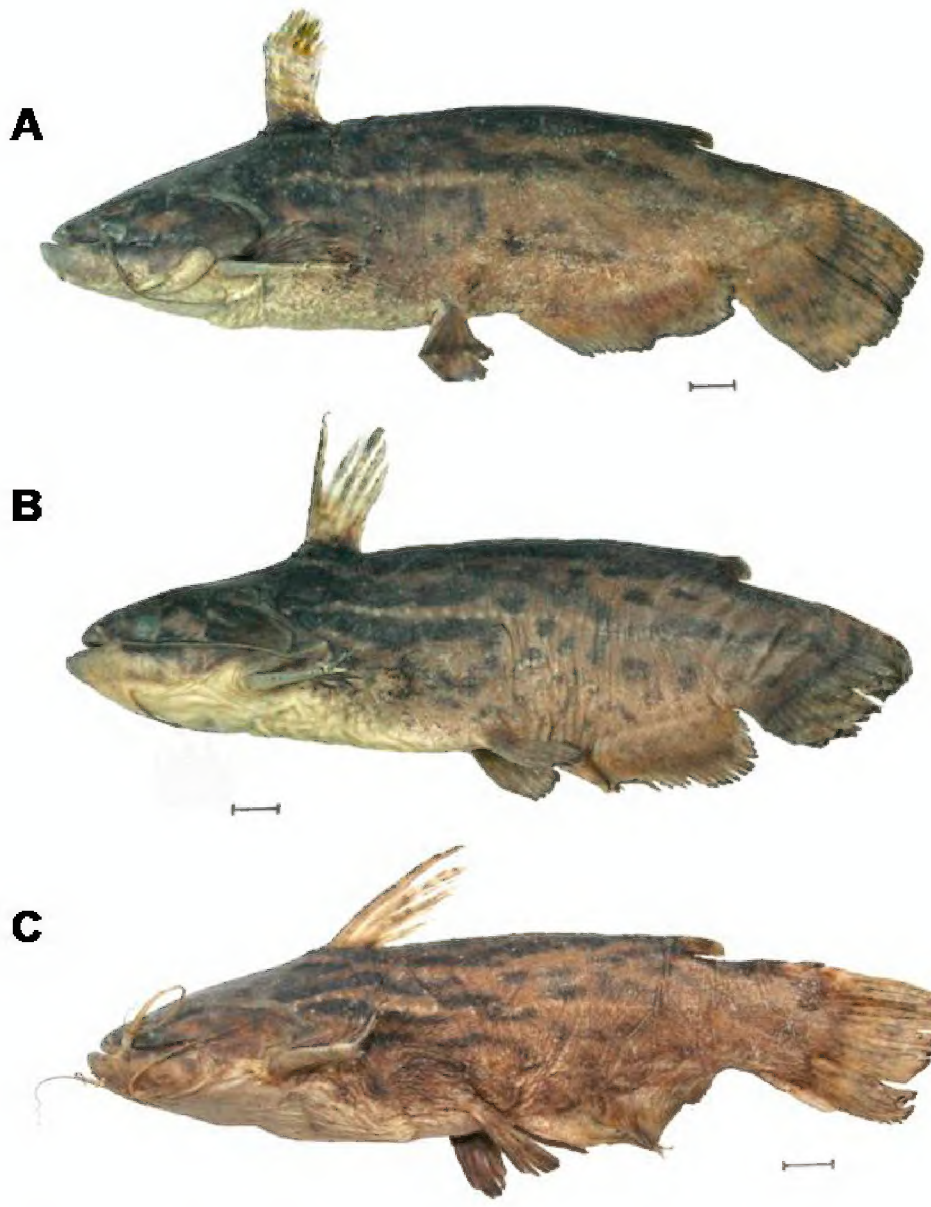

FIGURE 2. Representative specimens of *Trachelyopterus lucenai* collected in coastal lakes at river Tramandaí drainage basin: (A) Female, Itapeva lake, (B) Male, Itapeva lake, (C) Male, Malvas lake. Scale 1 cm. Photos: Vinicius R. Lampert.

Several factors contributed to the wide spreading and proliferation of this species in the coastal basins of Rio Grande do Sul, such as geomorfological conditions of the coastal plain, the linking among tributaries in wet station; anthropogenic interventions due to the canal opening for agricultural irrigation (Bertoletti *et al.* 1992); the availability of favorable habitats and food items (Garcia *et al*. 2006). In addition, other intrinsic biological features also play an important role for the dispersal of the species such as dorsal and pectoral fins with strong spines in front edge which could prevent predation and reproductive mode (insemination), which could increase the chance of fertilization and allow temporal and spatial segregation of mating and spawning (Meisner *et al.* 2000; Burns *et al.* 2002).

The factors and features mentioned above could help this species to become potentially invasive to the Tramandaí river basin, which, in turn, could led to several impacts to the native species. Studies in other regions showed how an introduced invasive species in a given natural environment can be associated to impacts for native flora and fauna, which is one of the major ecological threats for global biodiversity conservation (Moyle and Light 1996; Simberloff 2005).

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LITERATURE CITED

Artioli, L.G.S., J.P. Vieira, A.M. Garcia and M.A. Bemvenuti. 2009. Distribuição, dominância e estrutura de tamanhos da assembleia de peixes da lagoa Mangueira, sul do Brasil. *Iheringia, sér. zool.*, 99(4): 409-418.

Bertoletti, J.J., J.F. Pezzi da Silva and E.H.L. Pereira. 1992. Nota sobre o gênero *Trachelyopterus* Valenciennes, 1840, no estado do Rio Grande do Sul, Brasil (Siluriformes, Auchenipteridae). *Comunicações do Museu Ciências da PUCRS, série Zoologia* 5(10): 169-177.

Bertoletti, J.J., J.F. Pezzi da Silva and E.H.L. Pereira. 1995. A new species of the catfish genus *Trachelyopterus* (Siluriformes, Auchenipteridae) from southern Brazil. *Revue française de Aquariologie* 22(3-4): 71-74.

Burns, J.R., A.D. Meisner, S.H. Weitzman and L.R. Malabarba. 2002. Sperm and spermatozeugma ultrastructure in the inseminating catfish, *Trachelyopterus lucenai* (Ostariophysi: Siluriformes: Auchenipteridae). *Copeia* 1: 173-179.

Garcia, A.M., J.P. Vieira, M.A. Bemvenuti, D.M.L. Motta Marques, M. Burns, A. Moresco and V. Condini. 2006. Checklist comparison and dominance patterns of the fauna at Taim Wetland, South Brazil. *Neotropical Icthyology* 4(2): 261-268.

Meisner, A.D., J.R. Burns, S.H. Weitzman and L.R. Malabarba. 2000. Morphology and histology of the male reproductive system in two species of inseminating South American catfishes, *Trachelyopteurs lucenai* and *T. galeatus* (Teleostei: Auchenipteridae). *Journal of Morphology* 246: 131-141.

Milani, P.C.C. and N.F. Fontoura. 2007. Diagnóstico da pesca artesanal na lagoa do casamento, sistema nordeste da laguna dos Patos: uma proposta de manejo. *Biociências*15(1): 82-125.

Moyle, P.B. and T. Light. 1996. Biological invasions of fresh water: empirical rules and assembly theory. *Biological Conservation* 78: 149-161.

Simberloff, D. 2005. Non-native species do threaten the natural environment! *Journal of Agricultural and Environmental Ethics* 18: 595–607.

Schifino, L.C., C.B. Fialho and J.R. Verani. 2004. Fish community composition, seasonality and abundance in Fortaleza lagoon, Cidreira. *Brazilian Archives of Biology and Technology* 47(5): 755-763.

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